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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/931,286	08/16/2001	David Neil Payne	DYOUP0222US	1941

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EXAMINER	
PHAN, HANH	

ART UNIT	PAPER NUMBER
2633	

DATE MAILED: 12/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/931,286	PAYNE ET AL.	
	Examiner	Art Unit	
	Hanh Phan	2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 August 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is responsive to the Amendment filed on 08/25/2004.

Priority

2. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in United Kingdom on 02/19/1999. It is noted, however, that applicant has not filed a certified copy of the United Kingdom application as required by 35 U.S.C. 119(b).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jiang et al (US Patent No. 6,122,413) in view of Giles et al (US Patent No. 5,241,414 cited by applicant).

Regarding claim 1, referring to Figure 4, Jiang discloses an optical transmitter for a WDM system having multiple WDM channels comprising:

a pump laser (i.e., pump laser 178, Fig. 4) for producing pump beam;

a splitter (180)(Fig. 4) having an input and N outputs, the input being connected to receive the pump beam from the pump laser (178); and

a fiber laser array of up to N fiber lasers (i.e., a fiber laser array of up to N fiber lasers $\lambda 1$, $\lambda 2$, $\lambda 3$..., Fig. 4) operable to emit at respective wavelengths $\lambda 1$, $\lambda 2$, $\lambda 3$..., for respective ones of the multiple WDM channels, the N outputs of the splitter being connected to pump respective ones of the up to N fiber lasers (col. 4, lines 42-64).

Jiang differs from claim 1 in that he fails to teach a MxN multiplexer having inputs and N outputs and the M inputs being connected to receive the pump beams from respective ones of the pump lasers. However, Giles in US Patent No. 5,241,414 teaches teach a MxN multiplexer (13)(Fig. 1) having M inputs and N outputs and the M inputs being connected to receive the pump beams (12-1 to 12-M) from respective ones of the pump lasers (11-1 to 11-M)(see col. 2, lines 61-64). Therefore, it would have been obvious to one having skill in the art at the time the invention was made to incorporate the MxN multiplexer having inputs and N outputs and the M inputs being connected to receive the pump beams from respective ones of the pump lasers as taught by Giles in the system of Jiang. One of ordinary skill in the art would have been motivated to do this since Giles suggests in column 2, lines 61-64 that using such the MxN multiplexer having inputs and N outputs and the M inputs being connected to receive the pump beams from respective ones of the pump lasers have advantage of allowing insuring that failure of one or more of the pump light sources does not interrupt the supply of optical pump power.

Regarding claim 2, the combination of Jiang and Giles teaches the multiplexer is configured so that a pump beam received at any one of its M inputs is internally routed to all of its N outputs (col. 3 of Giles, lines 12-16).

Regarding claim 3, the combination of Jiang and Giles teaches where N/M is equal to an integer power of two (Fig. 1 of Giles).

5. Claims 4-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jiang et al (US Patent No. 6,122,413) in view of Giles et al (US Patent No. 5,241,414 cited by applicant) and further in view of Brock et al (US Patent No. 5,870.216).

Regarding claims 4 and 6, Jiang as modified by Giles teaches all the aspects of the claimed invention except fails to teach the multiplexer comprising a plurality of multiplexing locations where the pump beams are multiplexed, the configuration being such that no more than one half the total power of the pump beams can interact at any one of the multiplexing locations. However, Brock discloses an arrayed waveguide (148, fig. 9) as a multiplexing locations where the pump beams are multiplexed, the configuration being such that no more than one half the total power of the pump beams can interact at any one of the multiplexing locations (col. 12, lines 47-55). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ a multiplexer as taught by Brock into the system of the Jiang modified by Giles in order to split or multiplex the pump beams. One of ordinary skill in the art would have been motivated for doing this to reduce the system in size and cost as well. (Brock, col. 15, lines 29-37).

Regarding claim 5, the combination of Jiang, Giles and Brock teaches fiber couplers (30, fig. 9 of Brock) to provide the multiplexing locations.

Regarding claim 7, the combination of Jiang, Giles and Brock teaches the multiplexer is configured so that a pump beam received at any one of its M inputs is internally routed to all of its N outputs (col. 3 of Giles, lines 12-16).

Regarding claim 8, the combination of Jiang, Giles and Brock teaches the relationship of inputs and outputs (col. 3 of Giles, lines 32-36).

Regarding claim 9, the combination of Jiang, Giles and Brock teaches an arrayed waveguide (148, fig. 9 of Brock) as a multiplexing locations where the pump beams are multiplexed, the configuration being such that no more than one half the total power of the pump beams can interact at any one of the multiplexing locations. (Brock, col. 12, lines 47-55).

6. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jiang et al (US Patent No. 6,122,413) in view of Giles et al (US Patent No. 5,241,414 cited by applicant) and further in view of Ushirozawa et al (US Patent. No. 6,137,613).

Regarding claims 10 and 11, Jiang as modified by Giles teaches all the aspects of the claimed invention except fails to teach a power monitoring device arranged to measure power at a point in the transmitter after the multiplexer and a feedback control device connected to control the pump lasers responsive to the power measured by the power monitoring device. However, Ushirozawa teaches a power monitoring device arranged to measure power at a point in the transmitter after the multiplexer and a feedback control device connected to control the lasers responsive to the power

measured by the power monitoring device (Figs. 5 and 6, col. 6, lines 17-44). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the power monitoring device arranged to measure power at a point in the transmitter after the multiplexer and a feedback control device connected to control the lasers responsive to the power measured by the power monitoring device as taught by Ushirozawa into the optical system of Jiang modified by Giles in order to control the pump laser based on it power output. One of ordinary skill in the art would have been motivated for doing feedback to adjust the laser source, accordingly, provide the stability of the wavelength outputs.

Response to Arguments

7. Applicant's arguments with respect to claims 1-11 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh Phan whose telephone number is (571)272-3035.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan, can be reached on (571)272-3022. The fax phone number for the organization where this application or proceeding is assigned is (703)872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-4700.

HANH PHAN
PRIMARY EXAMINER